Support for the Amendment:

Claims 1 and 13 are amended to characterize the feed stream as a feed stream from a fermentation process. Support for the amendment can be found, for example, at FIGS. 1, 4, and 6-10 and in the specification from page 6, line 4 through page 7, line 28. No new matter has been added.

Claim 23 is introduced in place of cancelled claim 8. The outstanding Office Action states that claim 8 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. It is submitted that claim dependent 8 has now been rewritten as independent claim 23.

No new matter or new issues are introduced by this amendment. Upon entry, claims 1-7, and 9-23 are active in this application.

REMARKS

The Applicant's below-named representative would like to thank Examiner Joseph Drodge for the helpful and courteous discussion of the issues in this application held on December 10, 2009. This discussion focused on the differences between the present invention and the prior art relied upon in the outstanding Office Action. Examiner Joseph Drodge is thanked for his indication that by amending claims 1 and 13 to characterize the feed stream as a feed stream from a fermentation process, that he would be willing to withdraw the prior art-based outstanding rejections. Independent claims 1 and 13 have been amended to characterize the feed stream as a feed stream from a fermentation process. In addition, Examiner Joseph Drodge is thanked for the indication in the outstanding Office Action that claim 8 would be allowable if rewritten in independent form. Claim 8 has been cancelled and is replaced with independent claim 23 which includes the features of claim 8 rewritten as an independent claim.

The substance of the discussion with Examiner Joseph Drodge is summarized and further expanded upon in the following remarks.

The outstanding Office Action includes a provisional rejection of claims 1-7 and 9-17 based on obviousness-type double patenting over claims 1-12 of U.S. Application Serial No. 11/247,949 in view of U.S. Patent No. 3,794,712 to Aboutboul et al. and U.S. Patent No. 3,629,150 to Addy. In view of the enclosed Terminal Disclaimer document, it is submitted that this provisional rejection has been rendered moot. Accordingly, withdrawal of this provisional rejection is requested.

The outstanding Office Action includes a rejection of claims 1-7 and 13 under 35 U.S.C. § 103(a) over U.S. Patent No. 6,438,867 to Teisch et al., U.S. Patent No. 7,053,036 to DeGroot et al., U.S. Patent No. 6,743,300 to Gray, U.S. Patent No. 6,017,505 to Ziegler et al., U.S. Patent No. 3,794,712 to Aboutboul et al., and U.S. Patent No. 3,629,150 to Addy. This rejection is traversed.

Independent claim 1 is directed to a process for drying solids initially wet with water. The feed stream according to claim 1 is characterized as a feed stream from a fermentation process that comprises solids having water in interstitial spaces and water absorbed by the solids. By specifying that water is absorbed by the solids, claim 1 provides that the solids are capable of absorbing water. It is noted that not all materials are capable of absorbing water. Accordingly, claim 1 specifies solids which are both capable of absorbing water and having water present in the interstitial spaces of the solids. The process of claim 1 also includes combining the feed stream with a first solvent and a second solvent. Claim 1 specifies that the first solvent has a heat of vaporization lower than the heat of vaporization of water and is soluble with water. Claim 1 also specifies that the second solvent has a heat of vaporization lower than that of the first solvent and is miscible in the first solvent.

Independent claim 13 is directed to a process for drying solids in a feed stream from a fermentation process whose interstitial spaces are initially wet with water and ethanol wherein ethanol (a first solvent) is used to displace the water in the solids and either ether or n-propyl bromide (a second solvent) is used to displace the ethanol in the solids. The specified solids have water in interstitial spaces in the solids and water absorbed by the solids. Claim 13 further specifies that the ether or n-propyl bromide is removed by the application of heat.

Teich et al. are directed at preparing hydrogels (e.g., silica hydrogels) in a moving bed and countercurrent application. See Teich et al. at column 1, lines 5-27, and column 3, lines 43-67. There are numerous references throughout Teich et al. that refer to the use of a "drying fluid" or a "drying liquid" for drying microporous particles. For example, Teich et al. refer to using water as a drying fluid at column 4, lines 25-26. Teich et al. also disclose the use of a water miscible drying liquid, such as an alcohol, wherein the water is either wholly or partially exchanged for the water miscible drying liquid. See column 4, lines 28-34. A number of other suitable drying liquids are listed at column 4, lines 46-63.

Teich et al. fail to disclose or suggest treating a feed stream from a fermentation process according to the presently claimed invention. Furthermore, the outstanding Office Action fails to provide any explanation why one skilled in the art would modify Teich et al by placing the

hydrogels described by Teich et al. with a feed stream from a fermentation process according to the presently claimed invention.

Teich et al. fail to disclose or suggest a drying process wherein solids are wet with water present in interstitial spaces of the solids and wherein water is absorbed in the solids. Teich et al. describe a process for drying microporous, fluid-containing particles wherein the fluid is contained "in the pores of the particles to be dried." See Teich et al. at column 1, lines 5-9 and 32-39; at column 2, lines 43-44; and at column 3, lines 45-48. The most common example of particles used in Teich et al. is three-dimensionally networked silica particles wherein the fluid is removed from a silica hydrogel such that the interfacial tension of the fluid in the particles is eliminated in a way that the particles experience no shrinkage during the removal of the fluid. See Teich et al. at column 1, lines 13-21. Teich et al. go even further to establish that, during the drying process, the microporous particles do not lose their properties such as density and thermal conductivity, and that shrinkage of the particles does not occur. It is reasonable to conclude that if the particles disclosed in Teich et al. were capable of absorbing water, the physical properties of the particles would change depending upon the amount of water absorbed. However, because Teich et al. actually establishes an opposite condition (no change in particle properties with the removal of water), Teich et al. fail to teach or suggest a process wherein water is both absorbed by solids and is present within interstitial spaces of the solids.

Teich et al. fail to disclose a process in which two solvents are utilized to dry solids that are initially wet with water. Teich et al. disclose the use of a single solvent, such as an alcohol, for drying. While column 7, lines 25-30, of Teich et al. disclose the use of two liquids, only one of the liquids is actually characterized by Teich et al. as being a "fluid suitable for drying." The other liquid, which is used to initially displace the pore liquid, is actually characterized by Teich et al. as being "miscible with the pore liquid, but not suitable for drying."

The Office Action appears to rely upon claim 8 at column 12 of Teich et al. for the contention that two solvents are used to dry the pore liquid in the particles of Teich et al. Specifically, the Office Action states that the drying process identified as step (d) establishes that a second drying solvent is disclosed. However, the specified drying process of claim 8 in Teich

et al., and identified at column 3, line 27, is specified as being conducted in accordance with claim 1. See claim 8 at column 12, line 34-33 which states "wherein the drying in stage (d) is carried out as defined in claim 1." Claim 1 of Teich et al. specifies that the drying be effectuated by "increasing the temperature . . . which comprises supplying the heat required for the temperature increase by convection." Clearly, neither claim 1 nor claim 8 of Teich et al. disclose a drying process utilizing the second solvent of claim 1 of the currently pending application. Therefore, Teich et al. provide no teaching or suggestion of a process in which two solvents are utilized to dry solids that are initially wet with water.

Teich et al., fail to disclose or suggest a process for drying solids initially wet with water with a first solvent and a second solvent wherein the first solvent is miscible in water and has a lower heat of vaporization than that of water and wherein the second solvent is miscible in the first solvent and has a lower heat of vaporization than that of the first solvent. As related previously, Teich et al. describe a process wherein a single solvent application is utilized. Where Teich et al. discuss the use of two liquids, only one is characterized as being suitable for drying. Further, Teich et al. are silent as to the heat of vaporization of the fluid not suitable for drying as compared to either the pore liquid or the liquid that is suitable for drying. Clearly, Teich et al. do not teach or suggest the displacement of water with solvents having progressively lower heats of vaporization.

Ziegler et al. fail to describe a process that utilizes a feed stream from a fermentation process according to the presently claimed invention. Furthermore, Ziegler et al. fail to disclose or suggest the use of a first solvent and a second solvent according to either independent claim 1 or independent claim 13. Ziegler et al. describe solvents at, for example, column 4, line 36 through column 5, line 5. Although Ziegler et al. use the phrase "and mixtures thereof" in reference to listed solvents at column 4, line 42, Ziegler et al. fail to disclose or suggest the use of a first solvent having a heat of vaporization lower than the heat of vaporization of water and being soluble with water, and a second solvent having a heat of vaporization lower than the heat of vaporization of the first solvent and being miscible with the first solvent. Further Zeigler et al. does not discuss the absorption of water by the solids themselves and thus also fails to teach or

suggest a process in which solids have absorbed water and water present in interstitial spaces of the solids

DeGroot et al. fail to disclose a process that involves a feed stream from a fermentation process according to the presently claimed invention. The outstanding Office Action refers to DeGroot et al. for the disclosure of halogenated hydrocarbon of n-propyl bromide as a drying solvent for various substrates. See DeGroot et al. at column 1, lines 15-30. Clearly, the substrates are not substrates from a fermentation process. Furthermore, DeGroot et al. also fail to describe or suggest a process in which solids have absorbed water and water present in interstitial spaces of the solids.

Gray fail to describe a process that utilizes a feed stream from a fermentation process. Gray describes the use of n-propyl bromide as a solvent to treat materials placed in a cleaning chamber. As such Gray provides no teaching or suggestion of the use of a first solvent and a second solvent for drying solids in a feed stream according to either claim 1 or 13. Furthermore, Gray fails to teach or suggest a process in which solids have absorbed water and water present in interstitial spaces of the solids.

Aboutboul et al. fail to describe a process that involves a feed stream from a fermentation process. Aboutboul et al. are directed at a silica gels having a narrow pore diameter distribution in the range of 300-600 A, surface areas in the range of 200-500 m^2/g, pore volumes of 2.0 to about 3.5 cm^3/g. See Aboutboul et al. at column 1, lines 15-28. Clearly, Aboutboul et al. would not have suggested modifying any of the previously described references to achieve the presently claimed invention.

Addy fails to disclose a process that utilizes a feed stream from a fermentation process according to the presently claimed invention. Instead, Addy discloses catalysts suitable for polymerizing isobutene. See Addy at column 1, lines 15-18. Clearly, Addy would not have suggested modifying any of the previously cited references to utilize a feed stream from a fermentation process.

In view of the above comments, the invention would not have been obvious, and withdrawal of the rejection over Teisch et al., Ziegler et al., DeGroot et al., Gray, Aboutboul et al., and Addy is requested.

The outstanding Office Action includes a rejection of claims 9-12 and 14-17 under 35 U.S.C. § 103(a) over Teisch et al., Aboutboul et al., Addy, DeGroot et al., Gray, and Ziegler et al. This rejection is traversed.

Each of the references is discussed above. These references all fail to disclose a process that involves a feed stream from a fermentation process. It is submitted that one having ordinary skill in the art would not have received a suggestion from any of these references to modify any of the other references to achieve a process that involves a feed stream from a fermentation process according to the presently claimed invention.

In view of the above comments, the claim invention would not have been obvious from Teisch et al., Aboutboul et al., Addy, DeGroot et al., Gray, and Ziegler et al. Accordingly, withdrawal of this rejection is requested.

The indication in the outstanding Office Action that claims 18-22 are allowed is appreciated.

It is believed that the application is in condition for allowance. Early notice to this effect is earnestly requested.

Respectfully submitted,

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